Exhibit 2

EVIDENCE OF USE & ADDITIONAL TARGET SCOUTING FOR U.S. PATENT NO.7756983B2

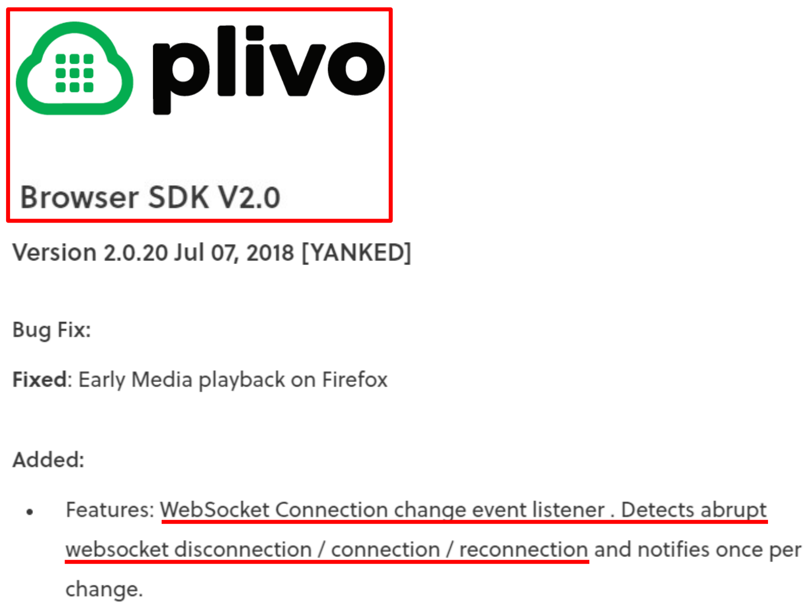
Title: Symmetrical bi-directional communication

Application No.: US12/109,198

Filing Date: 2008-04-24

Issue Date: 2010-07-13

Accused Product/Standard:



Browser SDK V2.0

Version 2.0.20 Jul 07, 2018 [YANKED]

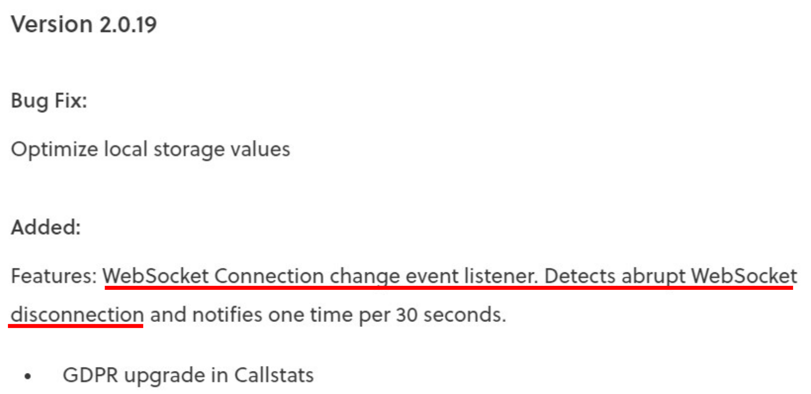
Bug Fix:

Fixed: Early Media playback on Firefox

Added:

- Features: WebSocket Connection change event listener . Detects abrupt websocket disconnection / connection / reconnection and notifies once per change.

Source: https://www.plivo.com/docs/sdk/client/browser/changelog#version-201



Version 2.0.19

Bug Fix:

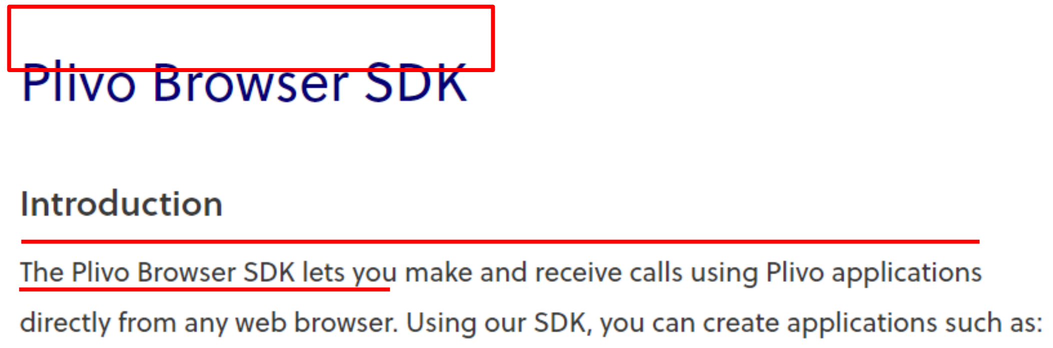
Optimize local storage values

Added:

Features: WebSocket Connection change event listener. Detects abrupt WebSocket disconnection and notifies one time per 30 seconds.

- GDPR upgrade in Callstats

Source: https://www.plivo.com/docs/sdk/client/browser/changelog#version-201



Plivo Browser SDK

Introduction

The Plivo Browser SDK lets you make and receive calls using Plivo applications directly from any web browser. Using our SDK, you can create applications such as:

Source: https://www.plivo.com/docs/sdk/client/browser/reference

Evidence of Use

Claim Language	Evidence of Infringement
21. A method of computer network node communication comprising:	Plivo supports WebSocket protocol. WebSocket protocol, which is defined under IETF RFC 6455, enables two-way communication between a client and a remote host. plivo Plivo Browser SDK Introduction The Plivo Browser SDK lets you make and receive calls using Plivo applications directly from any web browser. Using our SDK, you can create applications such as: Source: https://www.plivo.com/docs/sdk/client/browser/reference Browser SDK V2.0

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	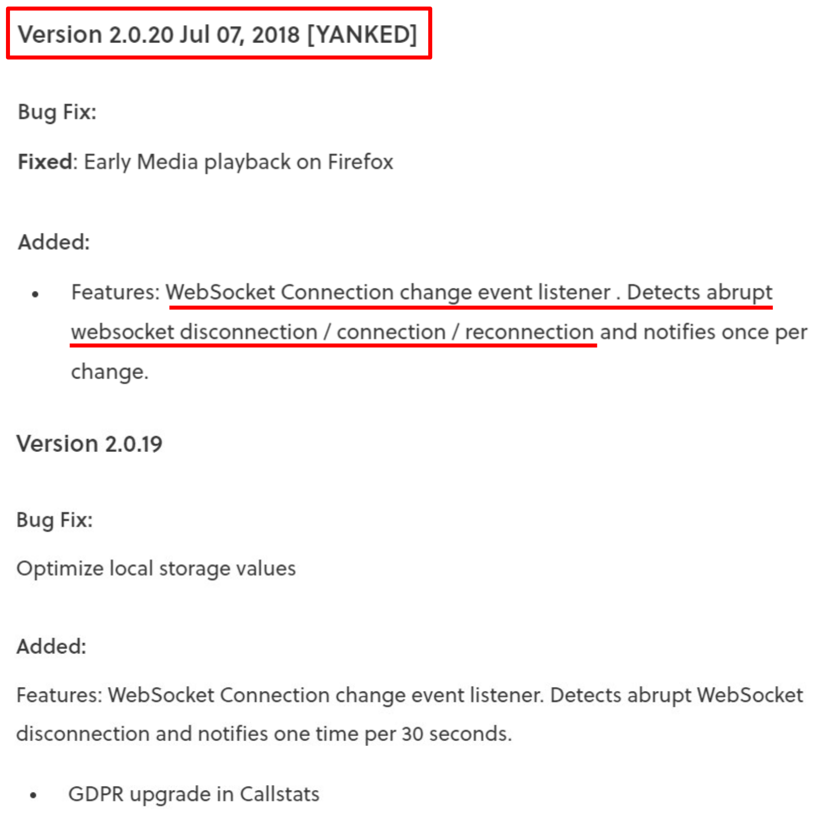 Version 2.0.20 Jul 07, 2018 [YANKED] Bug Fix: **Fixed**: Early Media playback on Firefox Added: • Features: WebSocket Connection change event listener . Detects abrupt websocket disconnection / connection / reconnection and notifies once per change. Version 2.0.19 Bug Fix: Optimize local storage values Added: Features: WebSocket Connection change event listener. Detects abrupt WebSocket disconnection and notifies one time per 30 seconds. • GDPR upgrade in Callstats Source: https://www.plivo.com/docs/sdk/client/browser/changelog#version-201

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	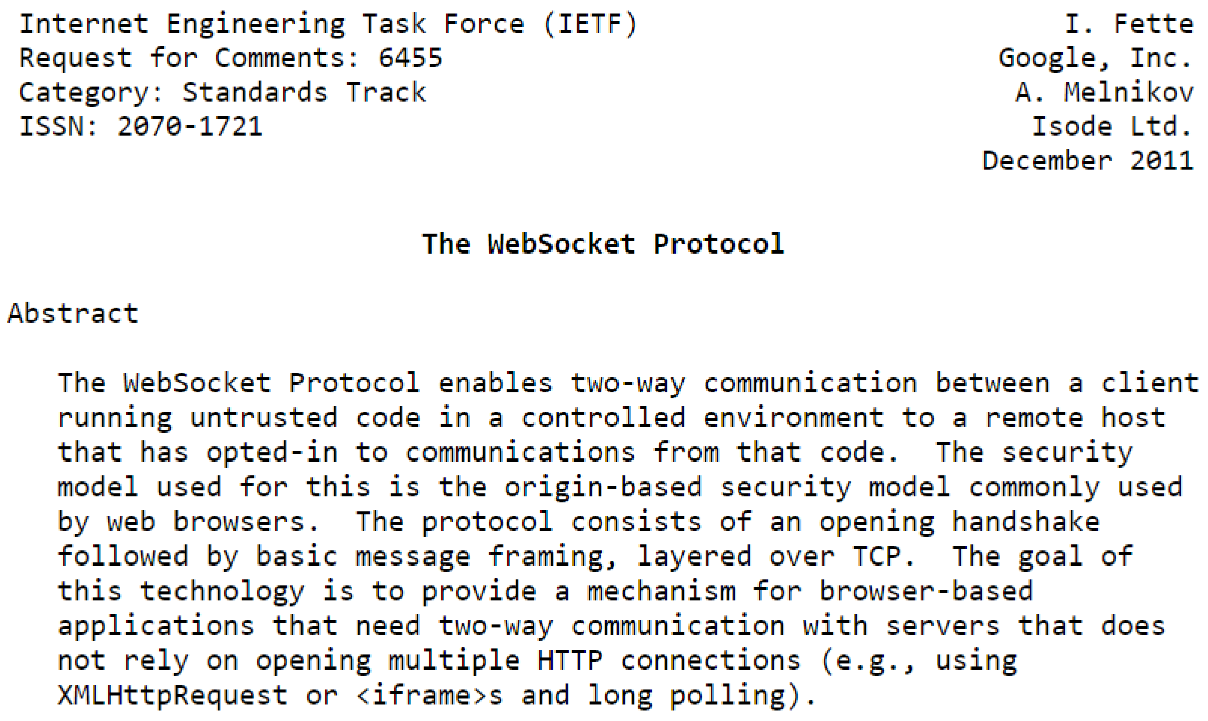 Internet Engineering Task Force (IETF) I. Fette Request for Comments: 6455 Google, Inc. Category: Standards Track A. Melnikov ISSN: 2070-1721 Isode Ltd. December 2011 **The WebSocket Protocol** Abstract The WebSocket Protocol enables two-way communication between a client running untrusted code in a controlled environment to a remote host that has opted-in to communications from that code. The security model used for this is the origin-based security model commonly used by web browsers. The protocol consists of an opening handshake followed by basic message framing, layered over TCP. The goal of this technology is to provide a mechanism for browser-based applications that need two-way communication with servers that does not rely on opening multiple HTTP connections (e.g., using XMLHttpRequest or <iframe>s and long polling). Source: https://www.rfc-editor.org/rfc/rfc6455
initially establishing a first asymmetric hypertext transfer protocol (HTTP) transactional session to establish an original network connection, said session being uniquely identifiable, between a first node and a second	The WebSocket protocol provides a bidirectional, full-duplex communications channel that operates over HTTP through a single TCP/IP socket connection. The WebSocket protocol uses HTTP as the initial transport mechanism ("initially establishing a first asymmetric hypertext transfer protocol (HTTP) transactional session") and uses the TCP connection ("original network connection"). This connection is used for sending messages between a client ("a first node") and a server ("a second node"). WebSocket starts with a standard HTTP requests and response session. Within the request-response chain, the client asks to open a WebSocket connection, and then the server responds.

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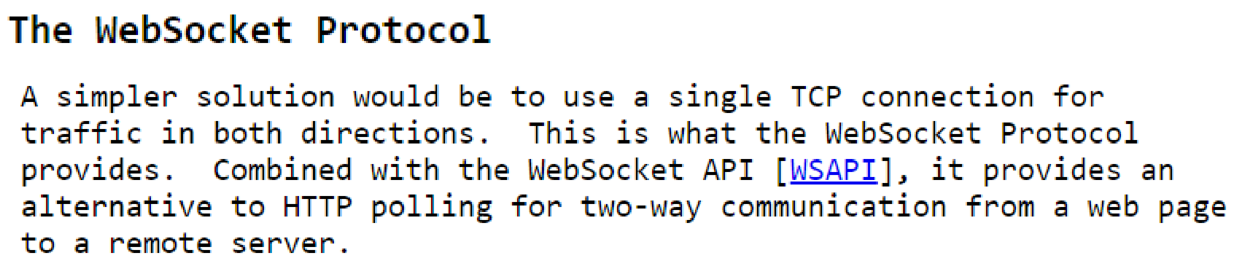
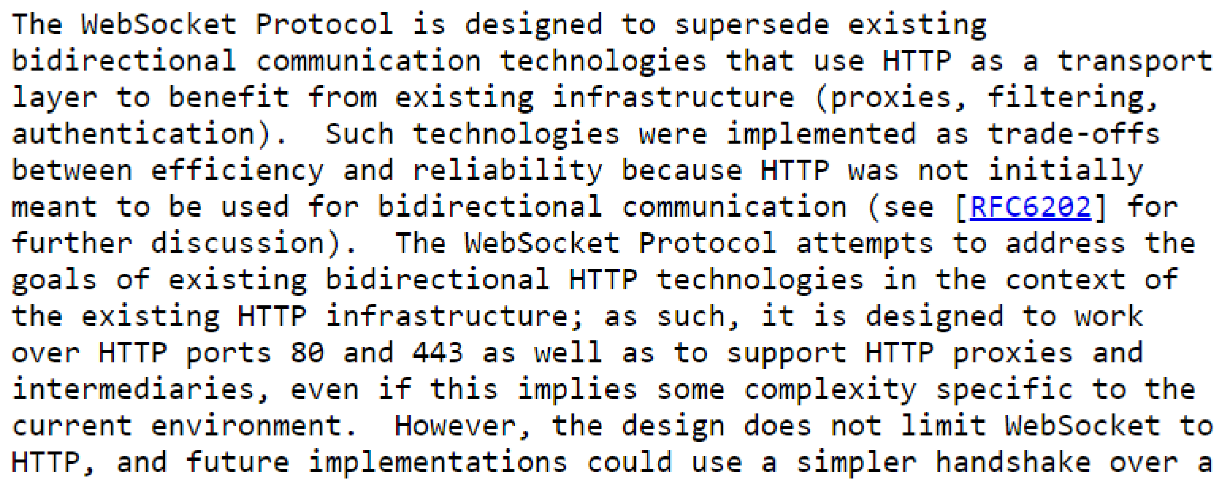
node, said first node enacting a first transactional role of a client and said second node enacting a second transactional role of a server, said roles comprising either of an HTTP server that relays data and an HTTP client that initiates requests;	Thus, it has been considered that the first and the second nodes are engaged in an asymmetric hypertext transfer protocol (HTTP) transactional session with an original network connection. The first node acts as an HTTP client that initiates requests and the second node acts as an HTTP server that relays data. Also, in the request-response chain, a Request-URI ("uniquely identifiable session") is used to identify the endpoint of the WebSocket connection. Thus, it can be said that the session is uniquely identifiable.  **The WebSocket Protocol** A simpler solution would be to use a single TCP connection for traffic in both directions. This is what the WebSocket Protocol provides. Combined with the WebSocket API [WSAPI], it provides an alternative to HTTP polling for two-way communication from a web page to a remote server. Source: https://www.rfc-editor.org/rfc/rfc6455  The WebSocket Protocol is designed to supersede existing bidirectional communication technologies that use HTTP as a transport layer to benefit from existing infrastructure (proxies, filtering, authentication). Such technologies were implemented as trade-offs between efficiency and reliability because HTTP was not initially meant to be used for bidirectional communication (see [RFC6202] for further discussion). The WebSocket Protocol attempts to address the goals of existing bidirectional HTTP technologies in the context of the existing HTTP infrastructure; as such, it is designed to work over HTTP ports 80 and 443 as well as to support HTTP proxies and intermediaries, even if this implies some complexity specific to the current environment. However, the design does not limit WebSocket to HTTP, and future implementations could use a simpler handshake over a

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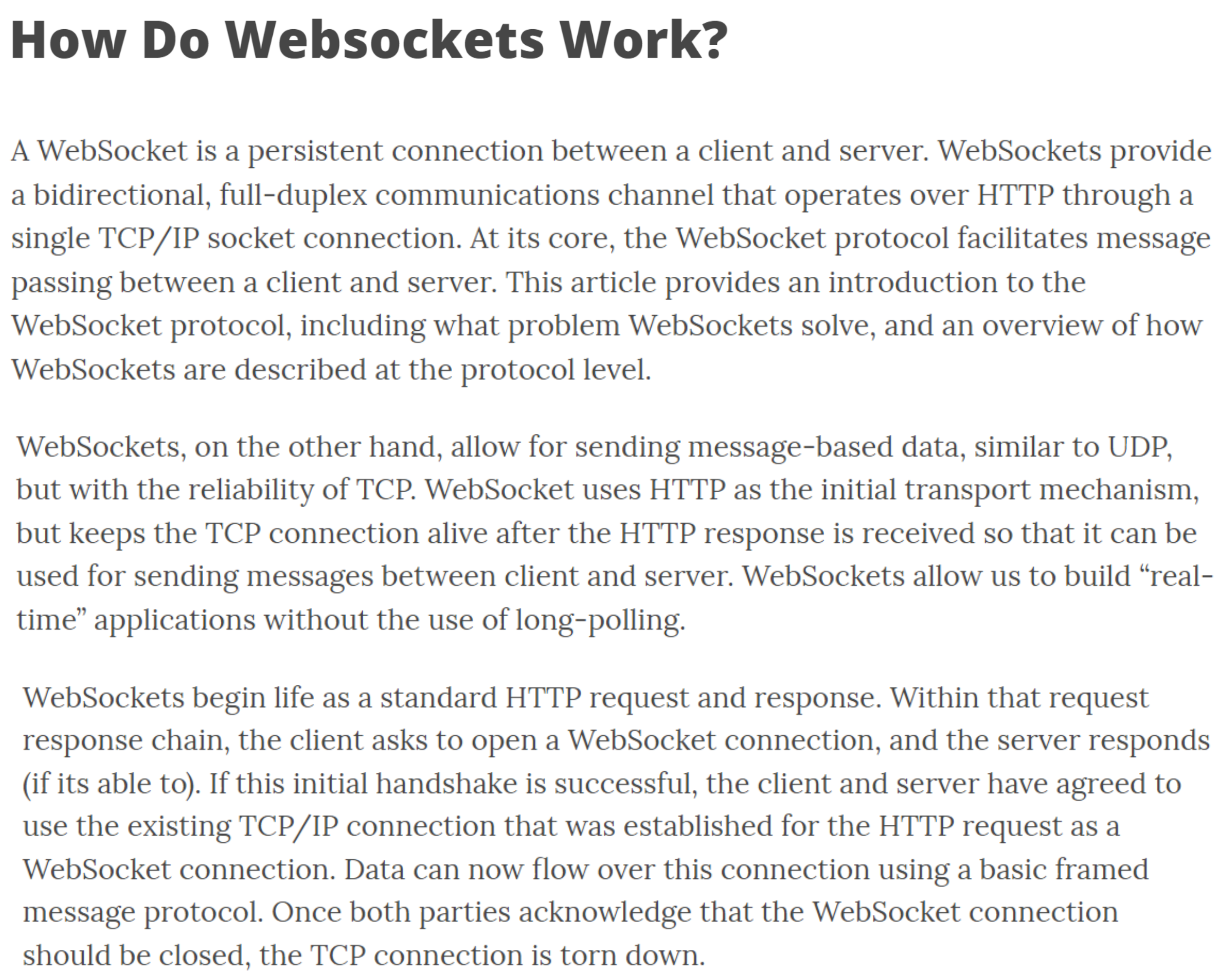
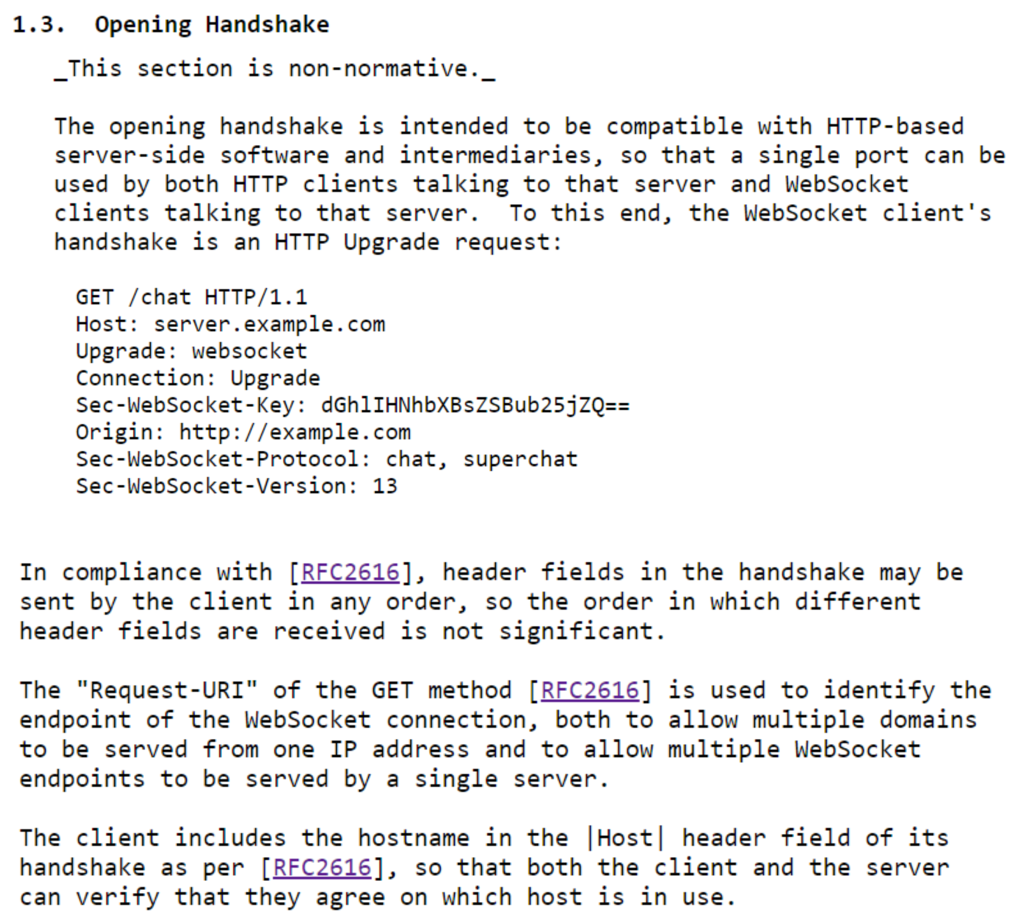
	Source: https://www.rfc-editor.org/rfc/rfc6455  **How Do Websockets Work?** A WebSocket is a persistent connection between a client and server. WebSockets provide a bidirectional, full-duplex communications channel that operates over HTTP through a single TCP/IP socket connection. At its core, the WebSocket protocol facilitates message passing between a client and server. This article provides an introduction to the WebSocket protocol, including what problem WebSockets solve, and an overview of how WebSockets are described at the protocol level. WebSockets, on the other hand, allow for sending message-based data, similar to UDP, but with the reliability of TCP. WebSocket uses HTTP as the initial transport mechanism, but keeps the TCP connection alive after the HTTP response is received so that it can be used for sending messages between client and server. WebSockets allow us to build "real-time" applications without the use of long-polling. WebSockets begin life as a standard HTTP request and response. Within that request response chain, the client asks to open a WebSocket connection, and the server responds (if its able to). If this initial handshake is successful, the client and server have agreed to use the existing TCP/IP connection that was established for the HTTP request as a WebSocket connection. Data can now flow over this connection using a basic framed message protocol. Once both parties acknowledge that the WebSocket connection should be closed, the TCP connection is torn down.

Claim Language	Evidence of Infringement

	Source: https://sookocheff.com/post/networking/how-do-websockets-work/
	
	
	1.3. Opening Handshake
	
	This section is non-normative.
	
	The opening handshake is intended to be compatible with HTTP-based server-side software and intermediaries, so that a single port can be used by both HTTP clients talking to that server and WebSocket clients talking to that server. To this end, the WebSocket client's handshake is an HTTP Upgrade request:
	
	`GET /chat HTTP/1.1`
	`Host: server.example.com`
	`Upgrade: websocket`
	`Connection: Upgrade`
	`Sec-WebSocket-Key: dGhlIHNhbXBsZSBub25jZQ==`
	`Origin: http://example.com`
	`Sec-WebSocket-Protocol: chat, superchat`
	`Sec-WebSocket-Version: 13`
	
	In compliance with [RFC2616], header fields in the handshake may be sent by the client in any order, so the order in which different header fields are received is not significant.
	
	The "Request-URI" of the GET method [RFC2616] is used to identify the endpoint of the WebSocket connection, both to allow multiple domains to be served from one IP address and to allow multiple WebSocket endpoints to be served by a single server.
	
	The client includes the hostname in the |Host| header field of its handshake as per [RFC2616], so that both the client and the server can verify that they agree on which host is in use.
	
	Source: https://www.rfc-editor.org/rfc/rfc6455

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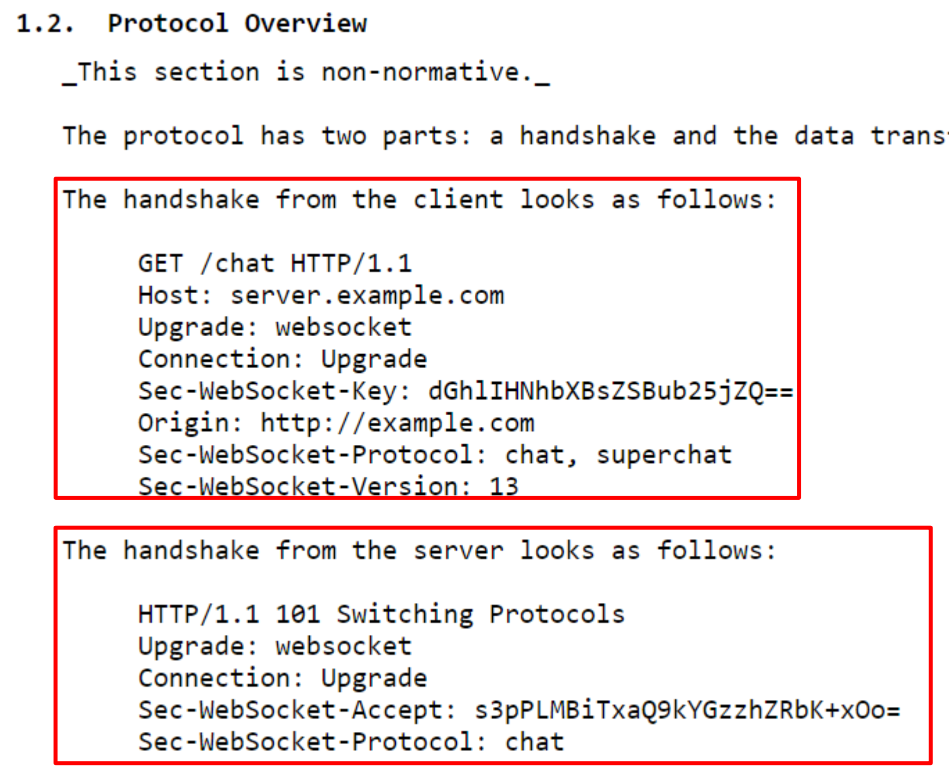
terminating said first asymmetric HTTP transactional session while maintaining an underlying network connection;	The WebSocket protocol starts with standard HTTP requests and responses. Within the request-response chain, the client asks to open a WebSocket connection, and the server responds. If this initial handshake is successful, the client and server agree to use the existing TCP/IP connection that was established for the HTTP request as a WebSocket connection. Here, the TCP/IP connection is the original network connection aka the underlying network connection. WebSocket communication is established by upgrading an HTTP request/response. Hence, it can be said that the asymmetric HTTP transactional session is terminated when WebSocket connection is established, and the existing TCP/IP connection is maintained.
	
	1.2. Protocol Overview
	This section is non-normative.
	The protocol has two parts: a handshake and the data transfer.
	The handshake from the client looks as follows:
	`GET /chat HTTP/1.1`
	`Host: server.example.com`
	`Upgrade: websocket`
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	`Origin: http://example.com`
	`Sec-WebSocket-Protocol: chat, superchat`
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	The handshake from the server looks as follows:
	`HTTP/1.1 101 Switching Protocols`
	`Upgrade: websocket`
	`Connection: Upgrade`
	`Sec-WebSocket-Accept: s3pPLMBiTxaQ9kYGzzhZRbK+xOo=`
	`Sec-WebSocket-Protocol: chat`

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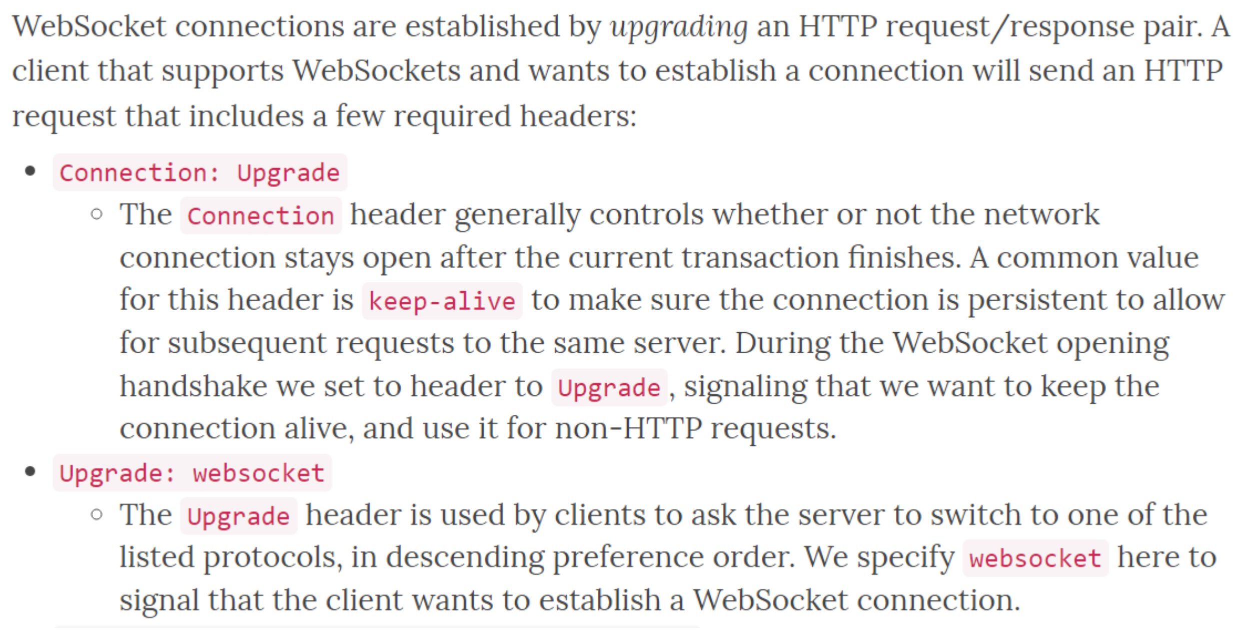
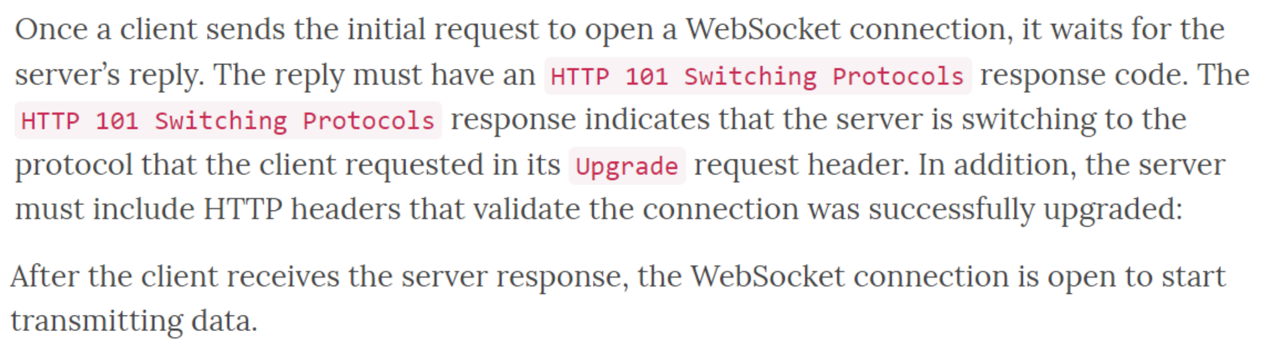
	Source: https://www.rfc-editor.org/rfc/rfc6455  WebSocket connections are established by *upgrading* an HTTP request/response pair. A client that supports WebSockets and wants to establish a connection will send an HTTP request that includes a few required headers: • `Connection: Upgrade` ◦ The `Connection` header generally controls whether or not the network connection stays open after the current transaction finishes. A common value for this header is `keep-alive` to make sure the connection is persistent to allow for subsequent requests to the same server. During the WebSocket opening handshake we set to header to `Upgrade`, signaling that we want to keep the connection alive, and use it for non-HTTP requests. • `Upgrade: websocket` ◦ The `Upgrade` header is used by clients to ask the server to switch to one of the listed protocols, in descending preference order. We specify `websocket` here to signal that the client wants to establish a WebSocket connection.  Once a client sends the initial request to open a WebSocket connection, it waits for the server's reply. The reply must have an `HTTP 101 Switching Protocols` response code. The `HTTP 101 Switching Protocols` response indicates that the server is switching to the protocol that the client requested in its `Upgrade` request header. In addition, the server must include HTTP headers that validate the connection was successfully upgraded: After the client receives the server response, the WebSocket connection is open to start transmitting data. Source: https://sookocheff.com/post/networking/how-do-websockets-work/

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	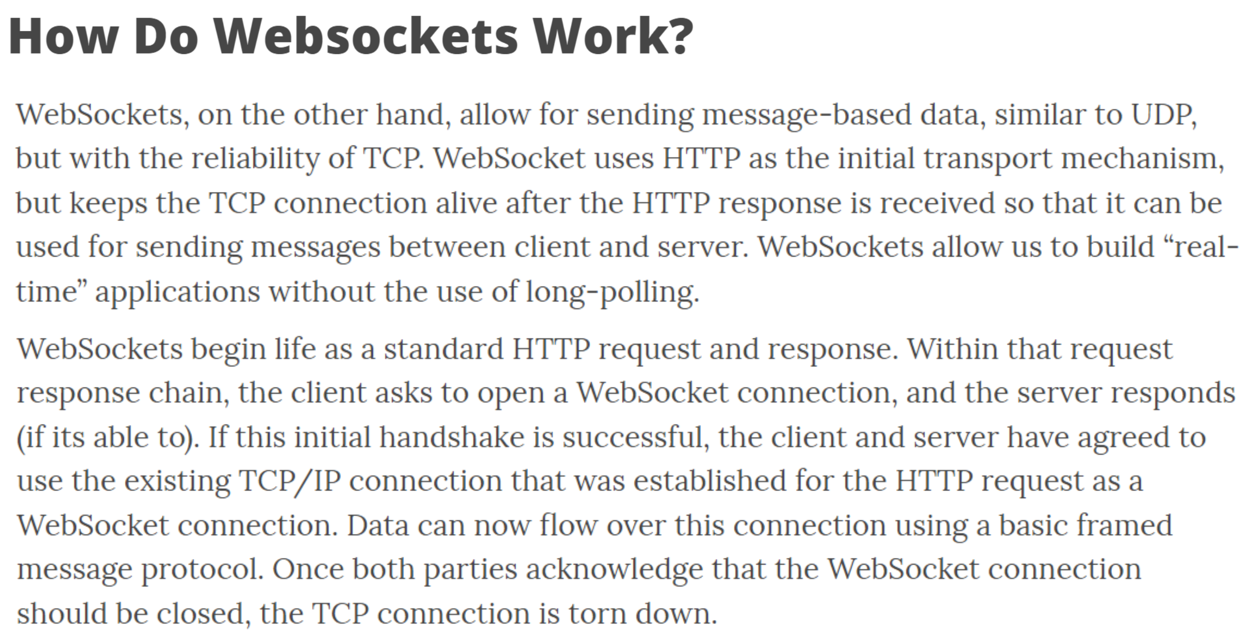 **How Do Websockets Work?** WebSockets, on the other hand, allow for sending message-based data, similar to UDP, but with the reliability of TCP. WebSocket uses HTTP as the initial transport mechanism, but keeps the TCP connection alive after the HTTP response is received so that it can be used for sending messages between client and server. WebSockets allow us to build “real-time” applications without the use of long-polling. WebSockets begin life as a standard HTTP request and response. Within that request response chain, the client asks to open a WebSocket connection, and the server responds (if its able to). If this initial handshake is successful, the client and server have agreed to use the existing TCP/IP connection that was established for the HTTP request as a WebSocket connection. Data can now flow over this connection using a basic framed message protocol. Once both parties acknowledge that the WebSocket connection should be closed, the TCP connection is torn down. Source: https://sookocheff.com/post/networking/how-do-websockets-work/
negotiating between said first node and said second	WebSocket connections are established by upgrading an HTTP request/response pair. A client that supports WebSocket and wants to establish a connection will send an HTTP

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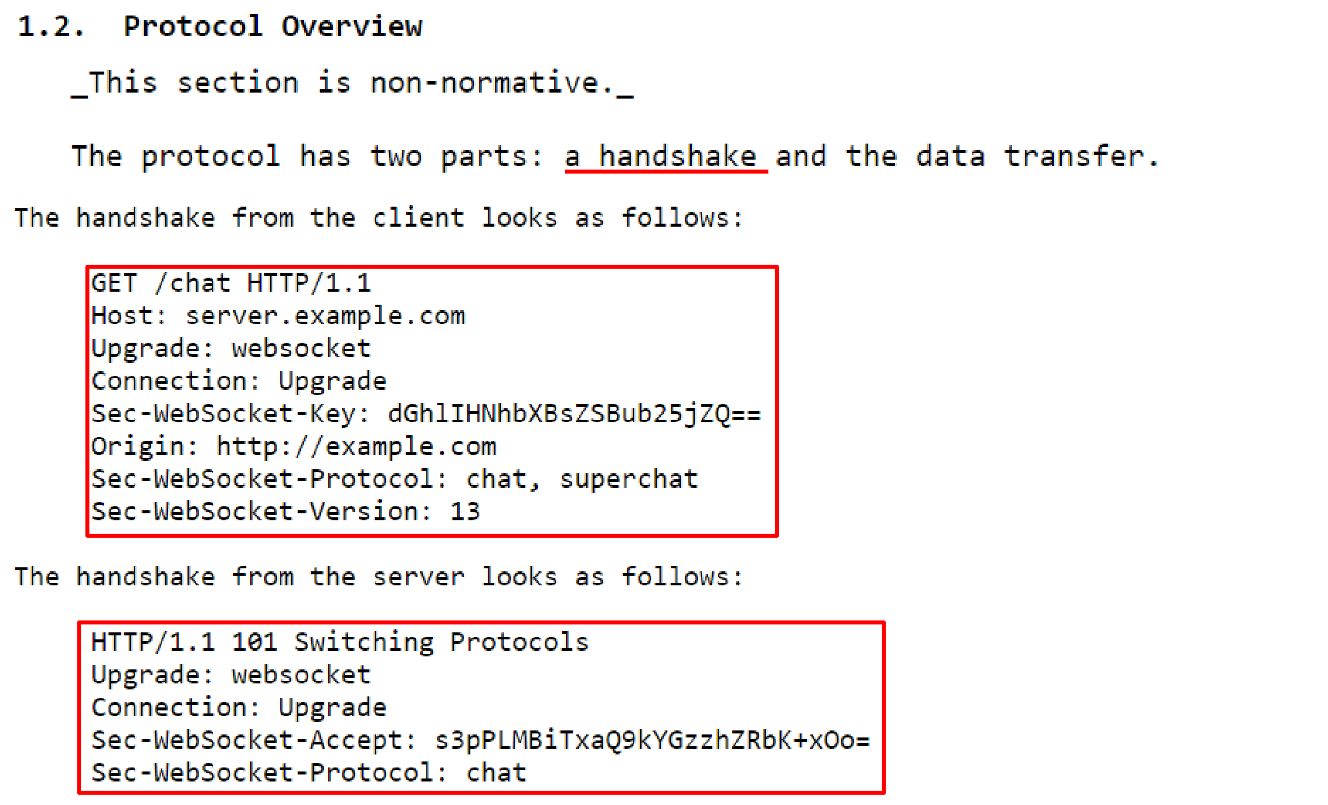
node a transactional role reversal, said step of negotiating referencing said original network connection; and	request to the server. Once a client sends the initial request to open a WebSocket connection, it waits for the server's reply. After the client receives an affirmative server response, the WebSocket connection is opened to start transmitting data. In WebSocket communication, both sides i.e., the client and the server can send data at will. That is, the server need not be restricted to only relaying responses and the client only sending requests. Thus, it can be said that the first and second network nodes negotiate transactional role reversal. During negotiation, existing TCP/IP connection ("original network connection") is maintained.
	
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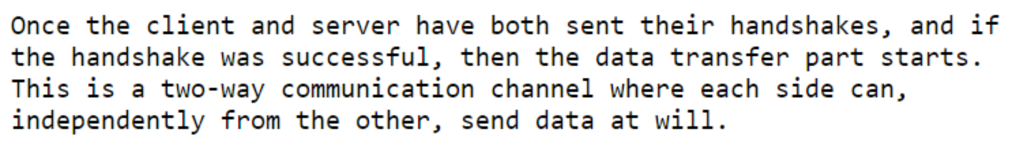
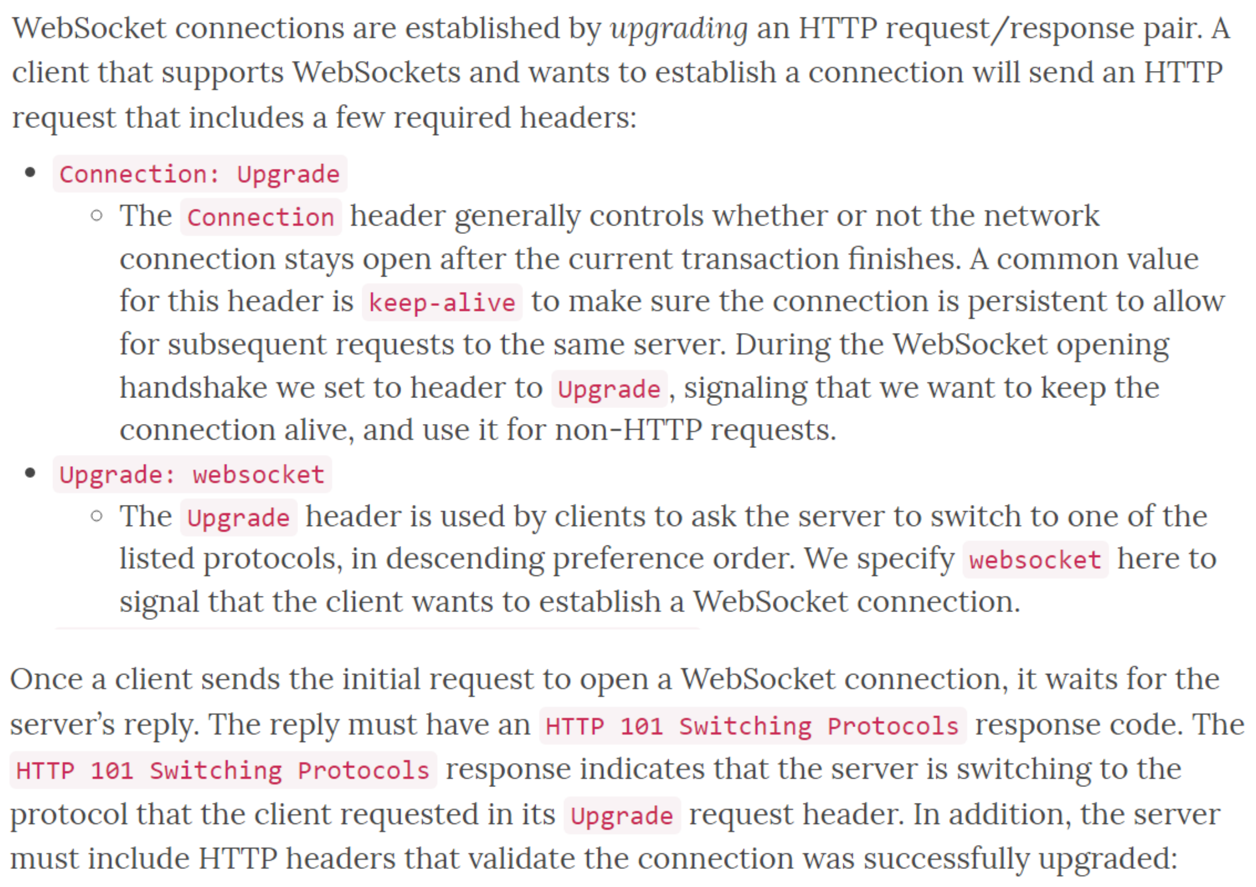
	 `Once the client and server have both sent their handshakes, and if the handshake was successful, then the data transfer part starts. This is a two-way communication channel where each side can, independently from the other, send data at will.` Source: https://www.rfc-editor.org/rfc/rfc6455  WebSocket connections are established by *upgrading* an HTTP request/response pair. A client that supports WebSockets and wants to establish a connection will send an HTTP request that includes a few required headers: • `Connection: Upgrade` ◦ The `Connection` header generally controls whether or not the network connection stays open after the current transaction finishes. A common value for this header is `keep-alive` to make sure the connection is persistent to allow for subsequent requests to the same server. During the WebSocket opening handshake we set to header to `Upgrade`, signaling that we want to keep the connection alive, and use it for non-HTTP requests. • `Upgrade: websocket` ◦ The `Upgrade` header is used by clients to ask the server to switch to one of the listed protocols, in descending preference order. We specify `websocket` here to signal that the client wants to establish a WebSocket connection. Once a client sends the initial request to open a WebSocket connection, it waits for the server's reply. The reply must have an `HTTP 101 Switching Protocols` response code. The `HTTP 101 Switching Protocols` response indicates that the server is switching to the protocol that the client requested in its `Upgrade` request header. In addition, the server must include HTTP headers that validate the connection was successfully upgraded:

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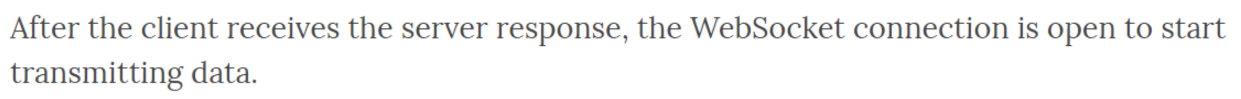
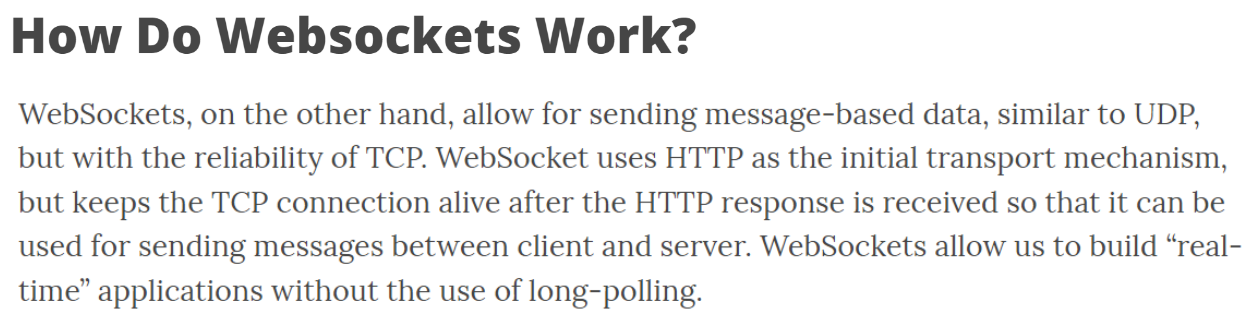
	 After the client receives the server response, the WebSocket connection is open to start transmitting data. Source: https://sookocheff.com/post/networking/how-do-websockets-work/  **How Do Websockets Work?** WebSockets, on the other hand, allow for sending message-based data, similar to UDP, but with the reliability of TCP. WebSocket uses HTTP as the initial transport mechanism, but keeps the TCP connection alive after the HTTP response is received so that it can be used for sending messages between client and server. WebSockets allow us to build "real-time" applications without the use of long-polling. Source: https://sookocheff.com/post/networking/how-do-websockets-work/
establishing a second asymmetric transactional session, said session being uniquely identifiable by said URI, said first node enacting said second transactional role and said second node enacting said first transactional role,	WebSocket connections are established by upgrading an HTTP request/response pair. A client that supports WebSocket and wants to establish a connection will send an HTTP request. Once a client sends the initial request to open a WebSocket connection, it waits for the server's reply. The reply must have an HTTP 101 Switching Protocols response code. The HTTP 101 Switching Protocols response indicates that the server is switching to the protocol that the client requested in its Upgrade request header. After the client receives the server response, the WebSocket connection is open to start transmitting data. During WebSocket connection, both the server and the client can relay data independent of each other. Here, a server can push information to the client and of course, the client can respond. Thus, it can be considered that the first and second nodes establishes a second asymmetric transactional session, where each node can enact the initial transactional role of the other. During the handshake, a Request-URI ("uniquely identifiable session") is used to identify the endpoint of the WebSocket connection. Thus, it can be said that the session is uniquely identifiable.

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	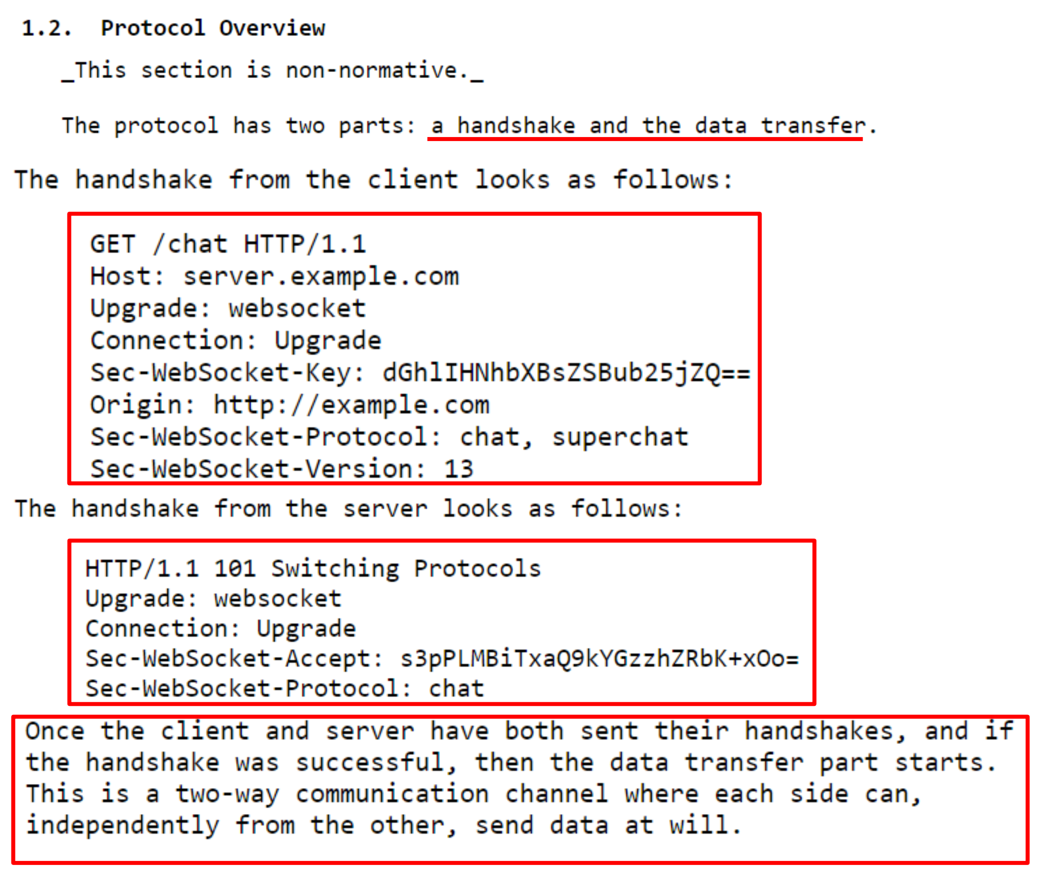
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	`Sec-WebSocket-Version: 13`
	The handshake from the server looks as follows:
	`HTTP/1.1 101 Switching Protocols`
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	`Connection: Upgrade`
	`Sec-WebSocket-Accept: s3pPLMBiTxaQ9kYGzzhZRbK+xOo=`
	`Sec-WebSocket-Protocol: chat`
	Once the client and server have both sent their handshakes, and if the handshake was successful, then the data transfer part starts. This is a two-way communication channel where each side can, independently from the other, send data at will.
	Source: https://www.rfc-editor.org/rfc/rfc6455

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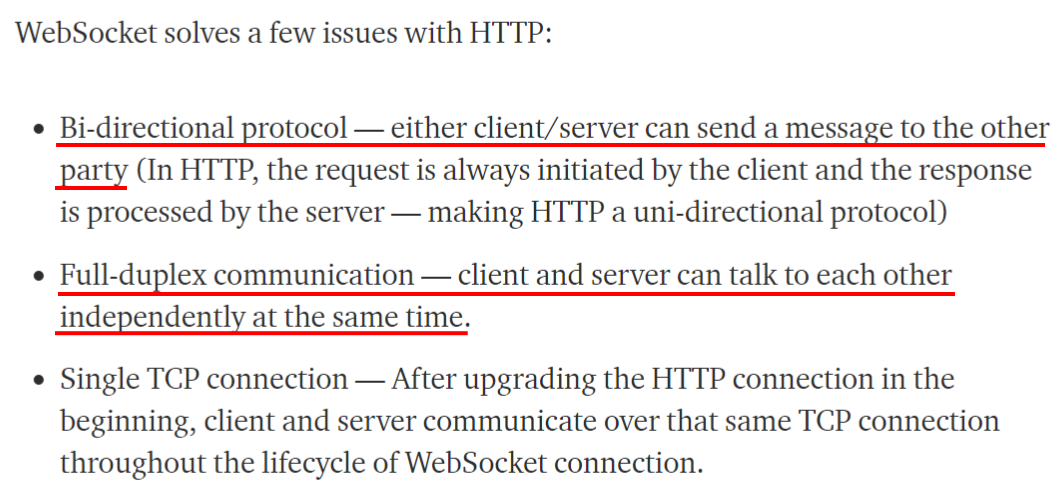
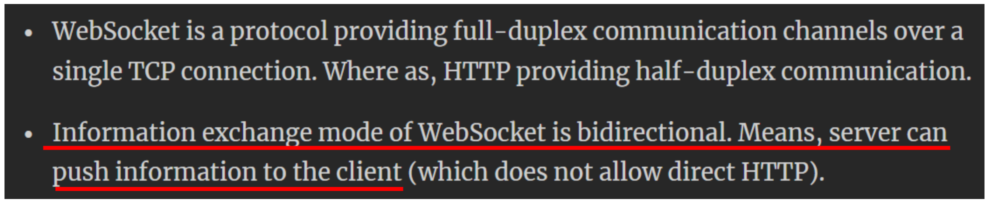
	 WebSocket solves a few issues with HTTP: • Bi-directional protocol — either client/server can send a message to the other party (In HTTP, the request is always initiated by the client and the response is processed by the server — making HTTP a uni-directional protocol) • Full-duplex communication — client and server can talk to each other independently at the same time. • Single TCP connection — After upgrading the HTTP connection in the beginning, client and server communicate over that same TCP connection throughout the lifecycle of WebSocket connection. Source: https://medium.com/platform-engineer/web-api-design-35df8167460  • WebSocket is a protocol providing full-duplex communication channels over a single TCP connection. Where as, HTTP providing half-duplex communication. • Information exchange mode of WebSocket is bidirectional. Means, server can push information to the client (which does not allow direct HTTP). Source: https://developerinsider.co/difference-between-http-and-http-2-0-websocket/

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	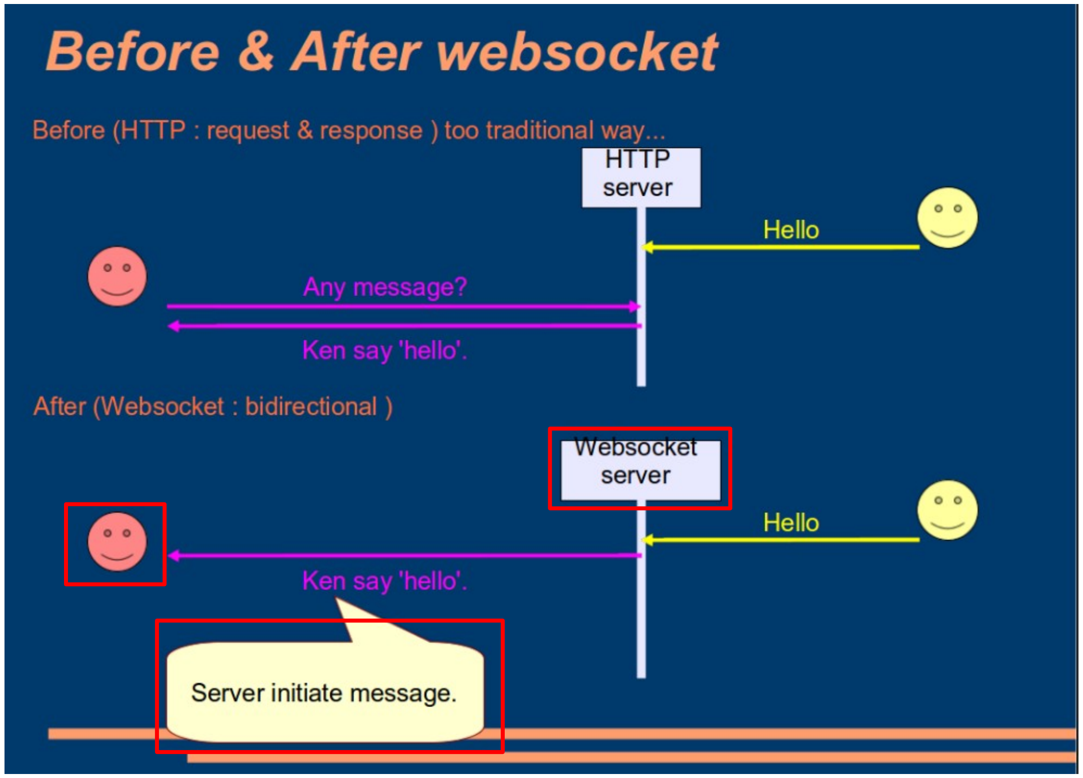 Before & After websocket Before (HTTP : request & response) too traditional way... HTTP server Hello Any message? Ken say 'hello'. After (Websocket : bidirectional) Websocket server Hello Ken say 'hello'. Server initiate message. Source: https://developerinsider.co/difference-between-http-and-http-2-0-websocket/

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	`GET /chat HTTP/1.1`
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	`Origin: http://example.com`
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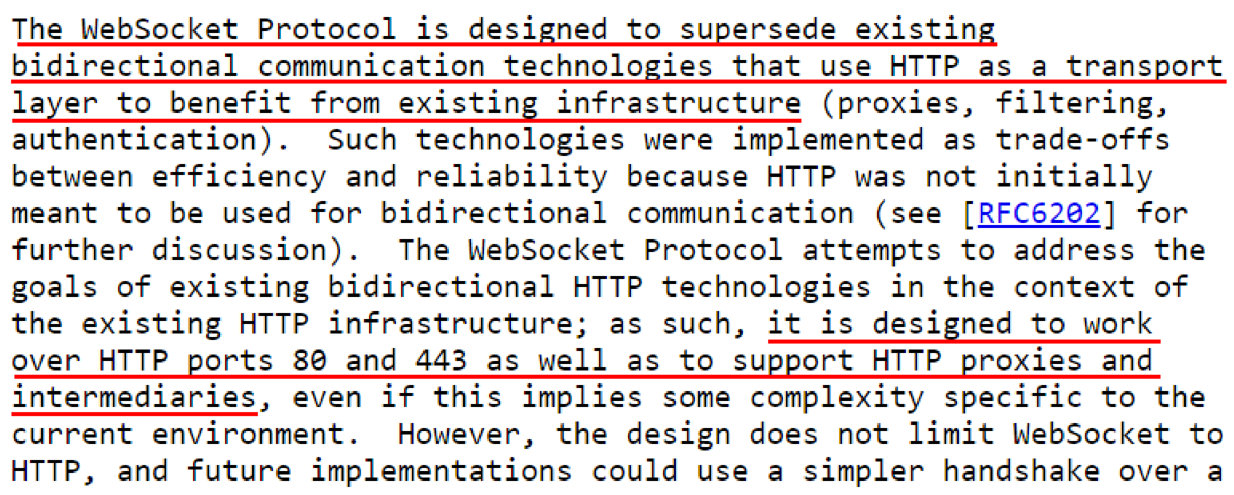
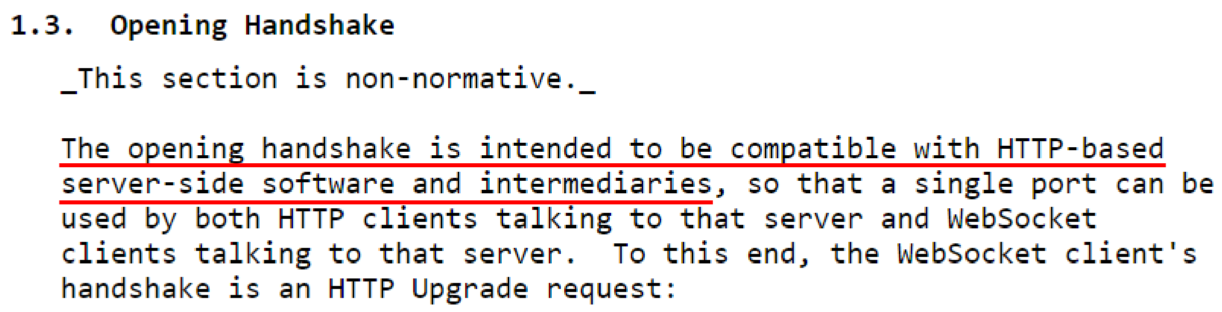
	In compliance with [RFC2616], header fields in the handshake may be sent by the client in any order, so the order in which different header fields are received is not significant.
	
	The "Request-URI" of the GET method [RFC2616] is used to identify the endpoint of the WebSocket connection, both to allow multiple domains to be served from one IP address and to allow multiple WebSocket endpoints to be served by a single server.
	
	The client includes the hostname in the |Host| header field of its handshake as per [RFC2616], so that both the client and the server can verify that they agree on which host is in use.
	
	Source: https://www.rfc-editor.org/rfc/rfc6455

wherein said uniquely identifiable session uses a network connection traversing hardware enforcing asymmetric communication.	The WebSocket is designed to work over HTTP ports 80 and 443. The opening handshake between the server and the client is compatible with HTTP-based server-side software and intermediaries. During the handshake, a Request-URI ("uniquely identifiable session") is used to identify the endpoint of the WebSocket connection. Thus, it can be said that the uniquely identifiable session uses a network connection traversing hardware

Claim Language	Evidence of Infringement
	enforcing asymmetric communication.  The WebSocket Protocol is designed to supersede existing bidirectional communication technologies that use HTTP as a transport layer to benefit from existing infrastructure (proxies, filtering, authentication). Such technologies were implemented as trade-offs between efficiency and reliability because HTTP was not initially meant to be used for bidirectional communication (see [RFC6202] for further discussion). The WebSocket Protocol attempts to address the goals of existing bidirectional HTTP technologies in the context of the existing HTTP infrastructure; as such, it is designed to work over HTTP ports 80 and 443 as well as to support HTTP proxies and intermediaries, even if this implies some complexity specific to the current environment. However, the design does not limit WebSocket to HTTP, and future implementations could use a simpler handshake over a  **1.3. Opening Handshake** _This section is non-normative._ The opening handshake is intended to be compatible with HTTP-based server-side software and intermediaries, so that a single port can be used by both HTTP clients talking to that server and WebSocket clients talking to that server. To this end, the WebSocket client's handshake is an HTTP Upgrade request:

Claim Language	Evidence of Infringement

	```
	GET /chat HTTP/1.1
	Host: server.example.com
	Upgrade: websocket
	Connection: Upgrade
	Sec-WebSocket-Key: dGhlIHNhbXBsZSBub25jZQ==
	Origin: http://example.com
	Sec-WebSocket-Protocol: chat, superchat
	Sec-WebSocket-Version: 13
	```
	 In compliance with [RFC2616], header fields in the handshake may be sent by the client in any order, so the order in which different header fields are received is not significant.
	
	The "Request-URI" of the GET method [RFC2616] is used to identify the endpoint of the WebSocket connection, both to allow multiple domains to be served from one IP address and to allow multiple WebSocket endpoints to be served by a single server.
	
	The client includes the hostname in the |Host| header field of its handshake as per [RFC2616], so that both the client and the server can verify that they agree on which host is in use.
	
	Source: https://www.rfc-editor.org/rfc/rfc6455